



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,531	09/26/2003	Wayne Castleberry	X-9425	6510

7590 09/28/2004

John S. Hale
GIPPLE & HALE
6665-A Old Dominion Drive
McLean, VA 22101

EXAMINER

GELLNER, JEFFREY L

ART UNIT PAPER NUMBER

3643

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,531

Applicant(s)

CASTLEBERRY, WAYNE

Examiner

Jeffrey L. Gellner

Art Unit

3643



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC §103

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Pruitt (US 2,988,441) in view of Garrett (US 5,617,672).

As to Claim 1, Pruitt discloses a horticultural growing medium (see title) comprising a flexible diphenylmethane diisocyanate foam material (col. 5 lines 24-46 in particular “4,4’ - methylenebis (phenyl isocyanate)” of line 39), the horticultural medium being capable of supporting plant growth (col. 1 lines 60-66). Not disclosed is the foam without filler and having a CEC of from 1.0 to 1.5. Garrett, however, discloses the use of a foam without filler to grow plants (col. 7 lines 58-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the medium of Pruitt by having without filler as disclosed by Garrett so that the medium could be used for hydroponic (see Garrett col. 7 lines 58-65) so as to increase the use of the foam. The foam without filler would inherently have a CEC of from 1.0 to 1.5.

As to Claim 2, Pruitt as modified by Garrett further disclose the CEC at 1.25 (inherent).

As to Claims 3 and 5, Pruitt as modified by Garrett further disclose 4,4’ diphenylmethane diisocyanate (“4,4’ - methylenebis (phenyl isocyanate)” of col. 5 line 39 of Pruitt).

Art Unit: 3643

As to Claim 4, the limitations of Claim 1 are disclosed as described above. Not disclosed is the diphenylmethane diisocyanate being polymeric. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by making the foam polymeric so as to meet a particular purpose.

As to Claim 6, Pruitt as modified by Garrett further disclose a foam with a pH of from 6.8 to 7.8 (inherent in the foam).

As to Claim 7, the limitations of Claim 1 are disclosed as described above. Pruitt as modified by Garrett further disclose the foam material highly porous (Pruitt at col. 3 lines 5-9). Not disclosed is the foam maintaining a 60 to 40 air water ratio. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam maintaining a 60 to 40 air water ratio so as to meet the needs for a desired plant species being grown.

As to Claims 8 and 9, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with at least 50% of the pores with a volume ranging in size between 10 and 200 microns or 40 to 90 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with at least 50% of the pores with a volume ranging in size between 10 and 200 microns or 40 to 90 microns so as to meet the needs for a desired plant species being grown.

As to Claim 10, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with pores ranging from 20-25% foam vol. and in a size from 0.2 to 10 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with

Art Unit: 3643

pores ranging from 20-25% foam vol. and in a size from 0.2 to 10 microns so as to meet the needs for a desired plant species being grown.

As to Claim 11, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with pores ranging from 25-35% foam vol. and in a size from 300 to 800 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with pores ranging from 25-35% foam vol. and in a size from 300 to 800 microns so as to meet the needs for a desired plant species being grown.

As to Claim 12, Pruitt as modified by Garrett further disclose the foam substantially sterile (inherent in the foam).

As to Claim 13, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with pores ranging about 30% foam vol. and in a size from 300 to 800 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with pores ranging from 30% foam vol. and in a size from 300 to 800 microns so as to meet the needs for a desired plant species being grown.

As to Claims 14 and 15, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam material having a total porosity ranging from 85 to 95% or 90 to 92%. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with total porosity ranging from 85 to 95% or 90 to 92% so as to meet the needs of a desired plant species being grown.

Claims 16-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over US Rubinate/Suprasec in view of Pruitt (US 2,988,441).

As to Claim 16, Rubinate/Suprasec discloses a sterile foam material made of diphenylmethane diisocyanates (for example, Rubinate 1670, 1680, and 1790) that would have at least 50% of its pores by foam volume ranging in size between 10 and 200 microns with a cation exchange capacity ranging from 1.0 to 1.5, the foam material having a total porosity ranging from about 85 to 95%. Not disclosed is the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth. Pruitt, however, discloses the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth (col. 3 line 39; col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the foam of Rubinate/Suprasec by using as a medium capable of supporting plant growth as disclosed by Pruitt so as to increase the use of the foam product.

As to Claims 17 and 19, Rubinate/Suprasec as modified by Pruitt further disclose 4,4' diphenylmethane diisocyanate ("4,4' - methylenebis (phenyl isocyanate)" of col. 5 line 39 of Pruitt).

As to Claims 18, Rubinate/Suprasec as modified by Pruitt further disclose the foam as polymeric (inherent).

As to Claim 20, Rubinate/Suprasec discloses a sterile foam material made of diphenylmethane diisocyanates (for example, Rubinate 1670, 1680, and 1790) that would be one of the group listed having at least 50% of its pores by foam volume ranging in size between 10

Art Unit: 3643

and 200 microns with a cation exchange capacity ranging from 1.0 to 1.5, the foam material having a total porosity ranging from about 90 to 92%. Not disclosed is the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth. Pruitt, however, discloses the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth (col. 3 line 39; col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the foam of Rubinate/Suprasec by using as a medium capable of supporting plant growth as disclosed by Pruitt so as to increase the use of the foam product.

As to Claims 21 and 22, Rubinate/Suprasec as modified by Pruitt further disclose the foam in sheets or blocks (Pruitt at col. 7 lines 59-60)

As to Claim 23, Rubinate/Suprasec as modified by Pruitt further disclose the CEC at 1.0 (inherent in the foam).

As to Claim 24, Rubinate/Suprasec as modified by Pruitt further disclose the foam as polymeric (inherent).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pruitt ('009), Wood, Hann et al., and JP9-104737 disclose in the prior art various growth media of foams.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jeffrey L. Gellner whose phone number is 703.305.0053. The

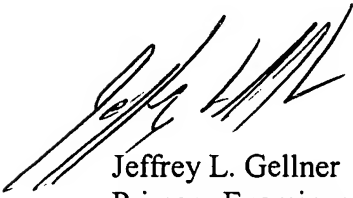
Art Unit: 3643

Examiner can normally be reached Monday through Thursday from 8:30 am to 4:00 pm. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Peter Poon, can be reached at 703.308.2574. The official fax telephone number for the Technology Center where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.1113.



Jeffrey L. Gellner
Primary Examiner